



Notice of Funding Opportunity

Title: Advanced Plug Load and Smart Exterior Lighting Systems
Website: <https://www.energy.ca.gov/solicitations/2020-07/gfo-20-303-advanced-plug-load-and-smart-exterior-lighting-systems>
Funding: Total: \$9,500,000. Maximum awards: \$1M-\$6.5M.
Dates: Pre-Application Workshop: August 5, 2020
Written Questions Deadline: August 10, 2020
Application Submission Deadline: October 5, 2020

Summary: The purpose of this solicitation is to fund applied research and technology demonstration projects to advance innovative technologies for controlling plug load and exterior lighting energy use. The objectives are: Plug loads: reduce electricity use of active and standby modes for residential and commercial plug load devices, provide information that may inform future updates to codes and standards and reduce commercial plug load electricity use with advanced controls integrated with building energy management systems (BEMS); and Exterior lighting: reduce exterior lighting electricity use and load through use of solid-state lighting, improvements in fixture efficiency and form factor, and controls to maximize use of carbon-free electricity.

Plug loads are one of the fastest growing categories of energy use in residential and commercial buildings. Plug loads accounted for 40% of California residential electricity consumption and 27% of California commercial electricity consumption in 2018. Due to stay-at-home orders resulting from COVID-19, more people are teleworking. This can result in residential plug load energy use increase and commercial plug load energy use decrease. With more and more devices being brought into and used in buildings, it is expected that the total energy use for plug loads is expected to increase in the future. Plug load devices are typically not monitored nor controlled. Many of these devices have no power management capabilities and are left on 24/7.

Exterior lighting is a major energy use for municipalities and the commercial building sector. Based on comments from community-based organizations, poor exterior lighting is one of the main concerns among residents of low-income communities. Exterior lighting uses electricity when the grid is not powered by carbon-free electricity.

Project Topic Areas:

The solicitation will have three funding groups:

Group 1: Analyze and Test Total Energy Consumption of Plug Load Devices to Support Codes and Standards for Non-covered Products – This research will analyze the devices not currently covered by California or US Standards, determine their total energy consumption (standby and active modes) and identify those with the most potential for consideration in future codes and standards. Applications must include at least 2 groups of commercial devices and 1 group of residential devices. Each group must test a minimum of 5 devices per group.

Plug load equipment to be considered must come from the following groups:

- Commercial Equipment:
 - Group 1c: Office equipment such as printers, multi-function devices, and fax machines,
 - Group 2c: Networking equipment such as modems, integrated access devices, and local network equipment,
 - Group 3c: Commercial lab equipment such as fume hoods, autoclaves, incubators, centrifuges;
 - Group 4c: Commercial computers
- Residential Equipment:
 - Group 1r: Networking equipment such as routers and modems
 - Group 2r: Office Equipment such as printers and multifunctional devices

Group 2: Demonstrate the Integration of Smart Plug Load Controls and Building Energy Management Systems in Commercial Buildings – This research will demonstrate the integration of advanced smart plug



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load controls with an existing buildings energy management system to reduce building energy use and electrical loads, and where possible shift these loads to reduce carbon emissions. The combined smart plug load controls and BEMS together must currently be at TRL 6-7 and be at TRL 8-9 by the end of the agreement.

Group 3: Demonstrate Smart Exterior Solid-State Lighting in Low-Income or Disadvantaged Communities

– This research will develop and demonstrate innovative designs and features for smart exterior LED luminaires to improve energy efficiency, reduce impact on the electricity grid, and maintain safety, performance and reliability. The TRL at the start of the project is TRL 6-7 and must progress to TRL 8-9 by the end of the project.

Funding:

There is up to \$9,500,000 available for grants awarded under this solicitation. The Energy Commission anticipates making 1 to 3 awards for each group but reserves the right to make additional awards or no awards for these groups. For group 3, Applied Research funds will be prorated if more than one research project is awarded. Match funding is required in the amount of at least 20% of the requested project funds for Groups 2 and 3 only. Applicants that provide more than this amount will receive additional points during the scoring phase. There is no minimum match requirement for Group 1. Applicants that provide match will receive additional points during the scoring phase.

Project Group	Available funding	Minimum award amount	Maximum award amount	Minimum match funding (% of EPIC Funds)
Group 1	\$1,000,000	\$500,000	\$1,000,000	None
Group 2	\$2,000,000	\$1,000,000	\$2,000,000	20% of grant amount requested
Group 3: (Applied Research = \$500,000; Technology Demonstration = \$6.0M)	\$6,500,000	\$3,250,000	\$6,500,000	20% of grant amount requested

Topic Area Requirements:

The Project Narrative for Groups 2 and 3 must include a Measurement and Verification Plan that describes how actual project benefits will be measured and quantified, such as by project energy use (kilowatt hours, kilowatts), cost savings for energy, and other benefits. All test, demonstration or deployment sites (Groups 2 and 3) must be located in a California electric IOU service territory. Group 3 is a TD&D solicitation with set aside funding for proposed projects located in and benefiting low-income and/or disadvantaged communities within IOU service territories, the project must allocate appropriate funding for CBO engagement for relevant tasks under the scope of work.

Applications will be evaluated as follows: Stage One proposal screening and Stage Two proposal scoring. Applicants may submit multiple applications, though each application must address only one of the project groups identified above. If an applicant submits multiple applications that address the same project group, each application must be for a distinct project. Applications will be screened, scored, and ranked within each group and scores will not be compared across groups. Therefore, there will be a rank of 1, 2 and so on for group 1, rank of 1, 2, and so on for group 2, and the same for group 3.

Eligible Applicants:

This solicitation is open to all public and private entities with the exception of local publicly owned electric utilities. In accordance with CPUC Decision 12-05-037, funds administered by the CEC may not be used for any purposes associated with local publicly owned electric utility activities.